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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PETE A. HAWKINS and KURIAPPAN P. ALAPPAT

Appeal 2009-004978
Application 10/014,904
Technology Center 2100

Decided: September 18, 2009

Before JAY P. LUCAS, JOHN A. JEFFERY, and THU A. DANG, *Administrative Patent Judges*.

DANG, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF CASE

Appellants appeal the Examiner's final rejection of claims 1, 4, 5, 7-10, and 16-22 under 35 U.S.C. § 134(a) (2002). We have jurisdiction under 35 U.S.C. § 6(b) (2002).

We affirm.

A. INVENTION

According to Appellants, "[t]he present invention discloses a computer system with system management features that has one or more separate system management buses that are dedicated to specific components types" (Spec. 2, ll. 10-12).

B. ILLUSTRATIVE CLAIMS

Claims 1 and 16 are exemplary and reproduced below:

1. A system comprising:

a first set of field replaceable units each being of a first type;

a second set of field replicable [sic] units each being of a second type;

a first management bus, directly coupled to each of the first set of field replaceable units, wherein the first management bus is coupled only to field replicable units of the first type;

a second management bus, directly coupled to each of the second set of field replaceable units, wherein the second management bus is coupled only to field replicable units of the second type;

a central management agent, coupled to the first management bus and the second management bus, to monitor each of the first and second sets of field replaceable units via the first and second management buses, and to transmit signals to control each of the first and second sets of field replaceable units via the first and second management buses; and

a communication link, coupled to the central management agent, to transmit signals received from the central management agent indicating failure of one or more of the first set of field replaceable units, and the second set of field replaceable units to a remote location.

16. A system comprising:

two or more temperature sensors;

a first management bus directly coupled to each of the two or more temperature sensors, wherein the first management bus is coupled only to temperature sensors;

two or more fan trays;

a second management bus directly coupled to each of the two or more fan trays, wherein the second management bus is coupled only to fan trays;

a central management agent, coupled to the first management bus and the second management bus, to monitor the temperature sensors and the fan trays via the first and second management buses, and to transmit signals to control

activation of one or more of the fan trays based upon signals received from one or more of the temperature sensors via the

first and second management buses, and having failure detection logic to detect a failure of the temperature sensors, and the fan trays; and

a network interface card coupled to the central management agent, to transmit signals received from the central management agent indicating failure of one or more of the temperature sensors, and the fan trays to a remote location.

C. REJECTIONS

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Umezawa	US 4,975,766	Dec. 4, 1990
Holland	US 5,367,669	Nov. 22, 1994
Jewett	US 6,073,251	Jun. 6, 2000
Stepp	US 6,487,463 B1	Nov. 26, 2002

Claims 1, 4, 5, and 7 stand rejected under 35 U.S.C. § l03(a) as being unpatentable over Stepp in view of Official Notice (as evidenced by Umezawa).

Claims 8-10 and 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Stepp, Official Notice, and Holland.[1]

[1] The Examiner's Answer fails to state that the rejections of claims 8-10 and 16-22, like the rejection of claims 1, 4, 5, and 7, rely on the Official Notice. In view of the manner in which Stepp is applied to claims 8-10 and 16-22 (Ans. 5-10), we find that the rejections of claims 8-10 and 16-22 clearly rely on Stepp as applied to claim 1, i.e., Stepp in view of the Official Notice. We also find that this omission, which was not raised by Appellants, was harmless error.

Claim 22 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Stepp, Official Notice, Holland, and Jewett.

The rejection of claims 1, 4, 5, 7-10, and 16-22 under 35 U.S.C. 112, first paragraph, are withdrawn by the Examiner because Appellants' arguments were found to be persuasive by the Examiner (Ans. 2).

II. ISSUES

1) Have Appellants shown that the Examiner erred in finding that Stepp in view of Official Notice (as evidenced by Umezawa) teaches or suggests "a central management agent . . . to monitor each of the first and second sets of field replaceable units via the first and second management buses, and to transmit signals to control each of the first and second sets of field replaceable units via the first and second management buses" (claim 1)? The issue turns on whether Stepp in view of the Official Notice teaches or suggests modifying Stepp's controller to transmit signals that control Stepp's temperature sensors.

2) Have Appellants shown that the Examiner erred in finding that Stepp and Official Notice in view of Holland teaches or suggests "a central management agent . . . having failure detection logic to detect a failure of the temperature sensors, and the fan trays" (claim 16)?

III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

Stepp

1) Stepp discloses a controller that monitors the temperature of computer system components as sensed by respective temperature sensors; and controls the components' temperatures by adjusting the speed of respective cooling fans (col. 6, ll. 14-33; Fig. 3).

2) The controller may also monitor each cooling fan and, if a failure of a cooling fan is detected, generate a user warning or shut down the computer system (col. 6, ll. 49-62; Fig. 3).

Umezawa

3) Umezawa discloses redundant temperature sensors whereby, when a temperature sensor fails, a control section operates a switching circuit to hand over sensing to another temperature sensor (col. 4, ll. 6-15).

Holland

4) Holland discloses a system fault monitor that monitors fans and power supplies of a disk array system; and a coupled alarm controller that triggers an alarm "when any failure" of the system is detected (col. 3, ll. 20-47; Fig. 1).

IV. PRINCIPLES OF LAW

Claim Interpretation

The claims measure the invention. *See SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc). "[T]he PTO gives claims their 'broadest reasonable interpretation.'" *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)). "Moreover, limitations are not to be read into the claims from the specification." *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (citing *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989)).

35 U.S.C. § 103(a)

Section 103(a) forbids issuance of a patent when "the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). In *KSR*, the Supreme Court emphasized "the need for caution in granting a patent based on the combination of elements found in the prior art," and discussed circumstances in which a patent might be determined to be obvious. *Id.* at 415 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966)). The Court reaffirmed principles based on its precedent that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* at 416. The operative question in this "functional approach" is thus "whether the

improvement is more than the predictable use of prior art elements according to their established functions." *Id.* at 417.

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

In affirming a determination of obviousness, the Federal Circuit has relied, in part, on an applicant's failure to present evidence that the proposed combination of teachings was "uniquely challenging or difficult for one of ordinary skill in the art" or "represented an unobvious step over the prior art." *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 418-19).

Official Notice

An adequate traverse of the Examiner's taking of Official Notice must contain adequate information or argument to create on its face, a reasonable doubt regarding the circumstances justifying the Examiner's notice of what is well known to one of ordinary skill in the art. *In re Boon*, 439 F.2d 724, 728 (CCPA 1971).

V. ANALYSIS

Claims 1, 4, 5, and 7; Stepp and Official Notice (as evidenced by Uzemawa)

With respect to independent claim 1, Appellants argue that "neither Stepp nor Umezawa disclose or suggest a central management agent transmitting signals to control both the temperature sensors and the fans,"

and "[p]articularly, neither reference discloses or suggests transmitting control signals to the temperature sensors" (App. Br. 10; Appellants' emphasis).

The Examiner finds that it would have been obvious to modify Stepp's controller to control Stepp's temperature sensors because "it is well-known in the computer art to control sensors with an external circuit," e.g., to deactivate malfunctioning temperature sensors (Ans. 9). The Examiner also provides Umezawa as evidence of this noticed fact (*Id.*).

Accordingly, an issue we address on appeal is whether Stepp in view of the Official Notice teaches or suggests "a central management agent . . . to transmit signals to control each of the first and second sets of field replaceable units" (claim 1). The Examiner cites Stepp's controller, temperature sensors, and fans as respectively teaching the "central management agent," "first set of field replaceable units," and "second set of field replaceable units" of claim 1 (Ans. 4); and Appellants acknowledge that the controller transmits signals to control the fans (App. Br. 9). Thus, this issue turns on whether Stepp in view of the Official Notice teaches or suggests modifying Stepp's controller to transmit signals that control the temperature sensors.

We begin our analysis by giving the claims their broadest reasonable interpretation. *See In re Bigio*, 381 F.3d at 1324. Furthermore, our analysis will not read limitations into the claims from the specification. *See In re Van Geuns*, 988 F.2d at 1184.

Contrary to Appellants' argument, claim 1 does not require "transmitting control signals to the temperature sensors" (App. Br. 10). That

is, claim 1 does not recite that the central management agent transmits control signals to the first field replaceable units, but merely recites that the central management agent transmits signals "to control" the first replaceable units. Therefore, we will not confine the scope of claim 1 to Appellants' asserted limitation.

Appellants fail to address the noticed fact that "it is well-known in the computer art to control sensors with an external circuit," e.g., to deactivate malfunctioning temperature sensors (Ans. 9). Instead, Appellants merely argue that neither Stepp nor Umezawa teaches or suggests transmitting control signals to temperature sensors (App. Br. 10). We find Appellants' mere assertion that there is lack of such a teaching by Stepp and Umezawa does not create a reasonable doubt that it was well-known in the computer art to control sensors with an external circuit. *See In re Boon*, 439 F.2d at 728. In fact, Appellants admit that it was well-known in the art to control temperature sensors, stating that "Umezawa discloses an external circuit for controlling temperature sensors" (App. Br. 10). Since Appellants have not shown the Examiner erred in finding that "it is well-known in the computer art to control sensors with an external circuit," we accept this noticed fact and the Examiner's related finding that it would have been obvious to modify Stepp's controller, in view of the Official Notice, to control the temperature sensors.

The issue remains as to whether it would have been obvious to modify Stepp's controller to transmit signals that control the temperature sensors. According to the Examiner, Appellants acknowledge that Stepp's controller would inherently transmit signals to devices, such as fans and sensors, to be

controlled (Ans. 9-10). Since the Appeal Brief does not refute this statement, we accept the Examiner's finding that Stepp's controller, as modified, would transmit control signals to the temperature sensors.

In view of the above, we conclude that Appellants have shown no error in the Examiner's finding that Stepp, in view of the Official Notice, teaches or suggests "a central management agent . . . to transmit signals to control each of the first and second sets of field replaceable units" (claim 1). Accordingly, we affirm the rejection of claim 1, and claims 4, 5, and 7 standing therewith, as unpatentable over Stepp in view of the Official Notice.

Though we affirm in view of Appellants' failure to address the Official Notice, we also affirm this rejection of Stepp in view Official Notice as evidenced by Umezawa.

Stepp's controller monitors the temperature of computer components as sensed by temperature sensors, and controls the components' temperatures by adjusting the speed of cooling fans (FF 1). Umezawa discloses that using temperature sensors for computer components (FF 3) is well-known. In Umezawa, when a temperature sensor fails, a control section operates a switching circuit to hand over monitoring to another temperature sensor (FF 3). We find a skilled artisan would have found it obvious to modify Stepp's controller to transmit signals that deactivate a failed temperature sensor and hand over sensing to another temperature sensor, in view of the fact that using temperature sensors for computer components is well-known in the art. Thus, a skilled artisan would have

found it obvious to modify Stepp's controller to transmit signals that also control temperature sensors.

Appellants present no evidence that such a modification of Stepp's controller would have been "uniquely challenging or difficult for one of ordinary skill in the art" or "represented an unobvious step over the prior art." *See Leapfrog*, 485 F.3d at 1162. Nor have Appellants presented evidence that such a modification represents more than a mere combination of familiar elements according to known methods or would yield more than predictable results. *See KSR*, 550 U.S. at 416.

Rather, Appellants argue that "[b]ecause both Stepp and Umezawa fail to disclose or suggest transmitting control signals to temperature sensors, any combination of Stepp and Umezawa would also fail to disclose or suggest transmitting control signals to temperature sensors" (App. Br. 10). This argument fails in that claim 1 does not require the central management agent to transmit control signals to the first field replaceable units; and in that it incorrectly seeks to show nonobviousness by attacking the references individually. *In re Merck & Co., Inc.*, 800 F.2d at 1097 (Fed. Cir. 1986).

Claims 8-10; Stepp, Official Notice, and Holland

With respect to claims 8-10, Appellants argue that "claims 8-10 depend from claim 1, and are thus patentable for the reasons discussed above with regard to claim 1" (App. Br. 12). More particularly, Appellants contend that "since claim 1 has not been rejected in view of Stepp and Holland, claims 8-10 cannot be rejected in view of that combination of references as claims 8-10 necessarily include the limitations of claim 1"

(App. Br. 12). We find Appellants' contention without merit. The Office may and, in fact, does frequently reject dependent claims under additional references.

Since Appellants' argument does not specify, as required, how the language of claims 8-10 patentably distinguishes the claimed invention over Stepp and Official Notice in view of Holland, we find that Appellants have not met their burden to demonstrate the Examiner's error. *See* 37 C.F.R. 1.111(b).

Claims 16-21; Stepp, Official Notice, and Holland

With respect to independent claim 16, Appellants argue that "Holland discloses a Watchdog Timer that detects faulty functioning of a microprocessor" and, further, "that a watchdog timer at a microprocessor is not equivalent to a central management agent having failure detection logic to detect a failure of temperature sensors, and a fan tray" (App. Br. 13; Appellants' emphasis).

The Examiner finds that "Holland discloses detecting failure of a component" and, therefore, it would have been obvious "to have a central management agent with failure detection logic to detect the failure of sensors since sensors are an essential component of monitoring and regulating temperature in the system" (Ans. 6-7). In addition, the Examiner cites Stepp as teaching "failure detection logic to detect a failure of the fan trays" (Ans. 6).

Accordingly, an issue we address on appeal is whether Stepp in view of Holland teaches or suggests "a central management agent . . . having

failure detection logic to detect a failure of the temperature sensors, and the fan trays" (claim 16).

Stepp's controller may monitor the cooling fans and, if a failure of a fan is detected, issue a user warning or shut down the computer system (FF 2). Thus, a skilled artisan would have understood Stepp's controller as teaching or suggesting "a central management agent . . . having failure detection logic to detect a failure of . . . the fan trays" (claim 16).

Contrary to Appellants' argument, Holland does not merely teach a "Watchdog Timer that detects faulty functioning of a microprocessor" (App. Br. 13). Holland also teaches a system fault monitor that monitors fans and power supplies of a disk array system; and a coupled alarm controller that triggers an alarm "when any failure" of the system is detected (FF 4). We find that a skilled artisan would have understood Holland as thereby teaching or suggesting failure detection logic for system components that regulate temperature.

We therefore agree with the Examiner's finding that it would have been obvious to modify Stepp's controller, in view of Holland, to include failure detection logic for temperature sensors. Appellants fail to address this finding or Holland's alarm controller, which is cited as teaching failure detection logic (Ans. 6; citing Holland, col. 3, ll. 43-45). Further, Appellants present no evidence that such a modification is more than a "predictable use" of Stepp's controller and failure detection logic. *KSR*, 550 U.S. at 417.

In view of the above, we conclude that Appellants have shown no error in the Examiner's finding that Stepp and Official Notice, in view of Holland, teaches or suggests "a central management agent . . . having failure

detection logic to detect a failure of the temperature sensors, and the fan trays" (claim 16). Accordingly, we affirm the rejection of claim 16, and claims 17-21 standing therewith, as unpatentable over Stepp in view of Holland.

Claim 22; Stepp, Official Notice, Holland, and Jewett

Likewise, we will affirm the Examiner's obviousness rejection of claim 22 over Stepp, Official Notice, and Holland, in view of Jewett (Ans. 8). Appellants have not presented any arguments pertaining to this rejection, let alone particularly pointed out errors in the Examiner's reasoning to persuasively rebut the Examiner's prima facie case of obviousness. Accordingly, we summarily sustain the Examiner's rejection.[2]

VI. CONCLUSIONS

1) Appellants have not shown that the Examiner erred in finding claims 1, 4, 5, and 7 are unpatentable over Stepp in view of Official Notice.

2) Appellants have not shown that the Examiner erred in finding claims 8-10 and 16-21 are unpatentable over Stepp and Official Notice in view of Holland.

3) Appellants have not shown that the Examiner erred in finding claim 22 is unpatentable over Stepp, Official Notice, and Holland in view of Jewett.

4) Claims 1, 4-5, 7-10, and 16-22 are not patentable.

[2] *See* MPEP § 1205.02, 8th ed., Rev. 3, Aug. 2005 ("If a ground of rejection stated by the examiner is not addressed in the appellant's brief, that ground of rejection will be summarily sustained by the Board.").

VII. DECISION

The Examiner's decision rejecting claims 1, 4, 5, 7-10, and 16-22 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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